the ape is always able to perceive this distinction (she will search long and patiently for a straw of any colour when told that it occurs somewhere in the general litter of white straws constituting her bed, and eventually pick it out), while she cannot be taught to distinguish any of the others, I conclude that her failure in this respect is not due to any want of intelligence, but to some deficiency in her powers of colour-perception.

## 2. Notes on some Entozoa in the Collection of the British Museum. By Fr. Sav. Monticelli[1].

[Received May 18, 1889.]

(Plate XXXIII.)

Thanks to the courtesy of Dr. A. Günther I have been able to examine the helminthological collection of the British Museum (N.H.), and to study closely the typical specimens of von Siebold and Baird which are contained therein. On the present occasion I shall merely make some remarks upon a few of the more interesting new species or such as are not well known. Other observations I hope to embody n a larger forthcoming paper.

### Trematoda.

1. Amphistomum truncatum, Rud. Ent. Syst. pp. 91 et 389.

I have found many specimens of this species taken from the intestine of a *Phoca vitulina*. My observations enable me to complete the description as follows:—Body elliptical, compressed or cylindrical, according to the state of preservation, with posterior extremity obtusely truncated and covered by fine spines, which in the anterior third are large, become gradually smaller in the middle third, and invisible in the posterior third.

Posterior sucker large, rounded, very prominent; pharynx of moderate size; œsophagus short; intestinal cæca long. The genital antrum placed in the anterior part of the body and surrounded by an elevated edge; it resembles a sucker; testes large and occupying the posterior part of the body; ovarium small, and uterus not much extended. Vitellaria disposed laterally and limited to the middle part of the body; vagina opening dorsally.

2. Distomum veliporum, Creplin, in Wiegmann's Archiv, 1842, p. 336, tab. ix.

There are in the collection specimens of this species found in the stomach ($\alpha$) of an *Acanthias* (*vulgaris*?) presented by Dr. Chapman, ($\beta$) of a *Scymnus*, sp., from Madeira, ($\gamma$) of a *Torpedo fairchildi* from Dunedin (New Zealand), presented by the Otago University Museum; and in the body-cavity of a *Raja nasuta* from Dunedin (New Zealand). The *Acanthias*, *Torpedo fairchildi*, and *Raja nasuta* are new hosts

[1] Communicated by Dr. A. Günther, V.P.Z.S.

for this *Distomum*, which up to now has been found in the stomach only.

*D. microcephalum*, Baird (Cat. Ent. Brit. Mus. p. 98, pl. ii. fig. 2), from the stomach of *Acanthias vulgaris*, is, I think, based on small specimens of *D. veliporum*.

3. Distomum microporum, sp. n. (Plate XXXIII. fig. 1.)

Body elongated, pyriform, of a yellow colour, finely plicated transversely, with a small caudal appendage; in front very narrow and cylindrical, behind gradually enlarged and swollen; posterior extremity obtusely lanceolate. Anterior sucker large, circular, subterminal, situated entirely on the ventral surface; posterior sucker smaller than the anterior, circular, placed at the commencement of the posterior enlargement of the body. The small genital antrum is placed almost immediately behind the anterior sucker. Penis of moderate size, enlarged at the base. Excretory system opening at the extremity of body subdorsally. Lengths of the specimens 20–32 millim.

The six specimens of this new species were taken by Dr. Günther from a *Plagyodus ferox* from Madeira. Trematoda have not been previously observed in the *Plagyodontina*.

4. Distomum gigas, Nardo, Mem. sopra alcune nuove e rare specie di Entozoi, in Heusinger's Zeitsch. f. org. Physik, 1827, p. 68. (Plate XXXIII. figs. 2, 3.)

I give a figure of this rare species, which, so far as I know, has not yet been figured. The only specimen existing in the collection was taken from the stomach of an *Ausonia cuvieri* which was found on the British coast.

5. Distomum halosauri, Jeffrey Bell, Ann. & Mag. Nat. Hist. (5) xix. pp. 116–117. (Plate XXXIII. figs. 4, 5.)

Mr. Bell has described this species, found in the enlarged ends of the ureters of a *Halosaurus macrochir* dredged off Cape St. Vincent. I give a figure of this interesting species, and I add some remarks to Bell's description.

Anterior sucker small, globose, situated ventrally, presenting in front a pointed elevation, which, observed in a microscopical preparation, seems to be pierced by a cavity (see fig. 5). Posterior sucker as large or hardly larger than the anterior, circular, enlarged, prominent. Pharynx enclosed in the anterior sucker; œsophagus slender; intestinal cæca not very long. Testes in irregular outline; ovarium before the testes; uterus much extended through the body; genital antrum placed immediately before the posterior sucker.

Entozoa have not been before discovered in *Halosaurus*.

6. Didymozoon serrani, sp. n. (Plate XXXIII. fig. 6.)

This new species was found on the gills of a *Serranus fimbriatus* from Madeira; the same undescribed species I have frequently found attached to the gills of the *Serranus gigas* of the Gulf of Naples.

At present I give only a figure of this new species to ensure its recognition. The detailed description, with anatomical remarks, will be given in a forthcoming paper. The lengths of the cysts of this new species are 6–10 millim.

*Didymozoon serrani* is the first species of this genus found in a fish of the family Percidæ, the other known species inhabiting fishes of the families Scombridæ and Sphyrænidæ.

## Cestoda.

7. Gyrocotyle rugosa, Diesing, Syst. Helm. vol. i. p. 480.

A specimen taken from the intestine of a *Callorhynchus antarcticus* from Dunedin (New Zealand). This very strange Cestode has hitherto been found only in *Mactra edulis*.

8. Bothriocephalus macrobothrium, sp. n. (Plate XXXIII. figs. 7, 8, 9.)

Head small, with the terminal cupula flattened; bothria lateral, small, prominent, with thick margin; neck very short, subcylindrical; body flattened. Anterior segments very small, hardly to be distinguished, becoming gradually more distinct towards the end of the body. The last segments not different in form from the preceding, but a little larger. Genital orifices lateral and in the anterior part of the segments.

Length of the specimens 16–20 centim.

The specimens were taken from the stomach of a *Trachypterus*, sp. inc., from Mauritius, presented by L. Bouton, Esq.

9. Bothriocephalus platycephalus, sp. n. (Plate XXXIII. fig. 10.)

Head pointed, triangular, pyramidal, anteriorly truncated, without distinct terminal cupula. Bothria large, much flattened, with indistinct fossette; neck very short, quadrangular; body flattened. Anterior segments small, the succeeding gradually larger; posterior margin arcuate; genital orifices lateral. Lengths of specimens 115–190 millim.

The host of this new species is *Beryx decadactyla* of Madeira, from which Entozoa have not been previously described.

10. Bothriocephalus tetrapterus, von Siebold, in Lehrbuch d. vergl. Anat. d. wirb. Thiere, Berlin, 1848, pp. 120, 143, 147, in notes. (Plate XXXIII. fig. 11.)

I complete Siebold's description of this species, which inhabits *Phoca vitulina*:—Head cordiform. Bothria lateral, enlarged, with margins expanded, so as to resemble four wings. Anterior segments trapezoidal, distinctly campanulate; the following rectangular, not campanulate, the later decidedly quadrate. I have not observed the incomplete transverse division of the segments described by Siebold. The male and female generative organs are double in each segment, with two distinct genital orifices, very small, situated

in the anterior third of the proglottis; exceptionally they are single, with a single genital orifice.

Length of complete specimen existing in the collection 55 millim.

11. Tetrabothrium macrocephalum, Rudolphi, Ent. Hist. pt. iii. p. 61.

*Tænia sulciceps*, described and figured by Baird (P. Z. S. 1859, p. 111, pl. lvi. figs. 1, 1*a*, 1*b*) from the intestine of *Diomedea exulans*, is only a specimen of this species of Rudolphi, which had not previously been found in *Diomedea*.

Again, the *Tænia diomedea*, n. sp. (?), described recently by Linstow ('Challenger' Report, Entozoa, p. 13) from *Diomedea brachyura*, is a specimen of *Tetrabothrium macrocephalum*, and probably the *Tetrabothrium torulosum* described by the same author from *Diomedea brachyura* is only a synonym of the same worm.

12. Phyllobothrium crispatissimum, sp. n. (Plate XXXIII. fig. 12.)

Very closely allied to *P. lactuca* and *P. tridax*, from which it may be easily distinguished by the larger head, the smaller bothria (which are extremely plicated with very small accessory suckers), by the broad and short neck, and by the very small size of the segments of the body, only gradually enlarged near the extremity of the body; the last segments are rectangular; genital orifices marginal.

Lengths of the specimens 140–190 millim. Unfortunately the host of this new species is unknown.

Pelichnibothrium, gen. nov.

Head with a large pyramidal haustellum, anteriorly truncated and provided with a well-developed terminal sucker; bothria four, enlarged, like a basin, completely adherent to the head, each with an accessory sucker, scrobiculiform, and disposed in couples on each side of the head. The bothria of each couple are very near together.

13. Pelichnibothrium speciosum, sp. n. (Plate XXXIII. figs. 13, 14.)

There are many specimens taken from *Alepidosaurus ferox*, from Madeira. I was unable to discover true segments of the body or the generative organs.

14. Tænia falciformis, Baird, Cat. Entoz. Brit. Mus. p. 116; P. Z. S. 1853, p. 24, pl. xxx. fig. 3. (Plate XXXIII. fig. 17.)

Baird described the rostellum of this *Tænia* as unarmed, but with a mark of doubt. I have observed that the rostellum, elongated, conical, and anteriorly subrounded, is armed with eight very slender and long hooks of a very characteristic form; the neck is indistinct; the genital orifices are marginal.

15. Tænia calva, Baird, Cat. Ent. p. 83; P. Z. S. 1853, p. 24, pl. xxxi. figs. 1, 1*a*. (Plate XXXIII. figs. 18, 19.)

There are in the collection numerous specimens of this species

found in the intestine of *Lagopus scoticus*. The small rounded head hardly distinct from the long neck, provided with four circular and large suckers, has the rostellum armed with a small crown of very numerous and minute hooks (Baird said the rostellum was unarmed). The genital orifices are marginal, on one side. The ova are small, ovoidal; contents a very small embryo, occupying about the fiftieth part of the total contents of the ova.

16. Tænia magellanica, sp. n. (Plate XXXIII. figs. 15, 16.)

I propose this name for a species of *Tænia* collected in Magellan Straits by Dr. Cunningham. This species, of a brown colour, 20–28 millim. in length, is thus characterized:—Head subclavate, rostellum not apparent; suckers large, as wide as the head; neck delicate, of moderate length. Anterior part of the body thin, posterior gradually enlarged; anterior segments small, following rectangular, the last trapezoidal. Genital orifices lateral, very small, and not easy to recognize.

17. Tænia bifaria, von Siebold, MSS.? (Baird, Cat. Ent. p. 79).

This interesting species has been, so far I know, not yet described. It is characterized as follows:—Head small, triangular, with a conical, pointed, unarmed rostellum and a very small sucker; neck short. Anterior segments small, narrow, gradually enlarged and rectangular, last segments subquadrate. The generative organs are duplicated in each segment, with the genital orifices, which are lateral and prominent, on either side. The penis-sheath is large; the penis of moderate size, armed with fine spines.

Lengths of the specimens taken from the intestine of *Nyroca leucophthalma* 39–90 millim.

## EXPLANATION OF PLATE XXXIII.

Fig. 1. *Distomum microporum*, sp. n., nat. size, p. 322.
2. —— *gigas*, nat. size, p. 322.
3. —— ——, posterior sucker, × 3, p. 322.
4. —— *halosauri*, × 3, p. 322.
5. —— ——, anterior part of the body; from a microscopical preparation, p. 322.
6. *Didymozoon serrani*, sp. n., nat. size: attached to the gills of *Serranus fimbriatus*, p. 322.
7. *Bothriocephalus macrobothrium*, sp. n., head, × 6, lateral view, p. 323.
8. —— ——, head, × 6, anterior view, p. 323.
9. —— ——, last segments, × 3, p. 323.
10. —— *platycephalus*, sp. n., head, magnified, p. 323.
11. —— *tetrapterus*, head, magnified, p. 323.
12. *Phyllobothrium crispatissimum*, sp. n., head, magnified, p. 324.
13. *Pelichnibothrium speciosum*, g. et sp. n., head, × 6, p. 324.
14. —— ——, head from a microscopical preparation, p. 324.
15. *Tænia magellanica*, sp. n., head, magnified, p. 325.
16. —— ——, last segments, p. 325.
17. —— *falciformis*, a hook, magnified, p. 324.
18. —— *calva*, ova, much magnified, p. 324.
19. —— ——, a hook, much magnified, p. 324.